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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,069	11/17/2003	Bernhard Stellwag	MOH-P010057	3307
24131	7590	12/01/2005	EXAMINER	
LERNER AND GREENBERG, PA P O BOX 2480 HOLLYWOOD, FL 33022-2480			MONDT, JOHANNES P	
			ART UNIT	PAPER NUMBER
			3663	

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/715,069	<b>Applicant(s)</b> STELLWAG ET AL	
	<b>Examiner</b> Johannes P. Mondt	<b>Art Unit</b> 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6 and 7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/17/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/8/05 has been entered.

### ***Information Disclosure Statement***

The examiner has considered the items listed in the Information Disclosure Statement filed 11/17/03. A signed copy of Form PTO-1449 is herewith enclosed. This copy is being provided at this time because another examiner is in charge.

### ***Response to Amendment***

Amendment filed 9/8/05 with said Request for Continued Examination forms the basis for this office action. In said Amendment Applicant cancelled claim 5 and substantially amended all pending claims 1, 3, 4, 6 and 7 (claim 2 having previously been cancelled) through substantial amendment of claim 1. Comments on Remarks submitted by Applicant with said Amendment are included below under "Response to Arguments".

***Specification***

1. The specification is objected to because the term "bright" in the limitation "surfaces of the components still being bright" is a relative term that is not quantified.

The degree of oxidation has to be small for any surface to be bright, but how small is never specified.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. The term "bright" in ***claims 1, 3-4 and 6-7*** (through line 12 of claim 1) is a relative term rendering the claim indefinite. The term "bright" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. ***Claims 1, 3-4 and 6-7*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hettiarachchi (5,818,893). This rejection is provided subject to the interpretation of "bright" as being substantially non-oxidized.

*Hettiarachchi teaches* (title, abstract, cols. 1-4 and 8-11) a method for protecting components of a primary system (col. 8, l. 24-29) of a boiling water reactor (col. 1, l. 10-32) having a pressure vessel 10 and feed water line 12 (col. 8, l. 24-29) opening out into the pressure vessel (Figure 1), the method comprising: providing an alcohol selected from the group consisting of methanol, ethanol and propanol (namely: ethanol: see col. 9, l. 55-67); continuously (in the test over a period of about 30 minutes, and necessarily "continuously" because the ethanol is added as a component in a liquid: see col. 9, l. 55-67 and col. 10, l. 1-16; in operational use the concentration of the solution is clearly maintained (see ) feeding the alcohol into a primary coolant ("high-temperature water"; col. 9, l. 9-23). Furthermore, noting that the addition of Pd during only 30 minutes is only a test showing the feasibility of depositing palladium on Type304, in applications of the invention to actual use in BWRs the solution is evidently taught to be maintained at a level to ensure the Pd concentration to be between 1 ppb and 1,000 ppb (=parts per billion) (col. 11, l. 23-25), while the ratio of Pd atoms to ethanol molecules follows from the cited content in milligrams of Pd-acetylacetonate ( $\text{Pd}(\text{C}_5\text{H}_7\text{O}_2)_2$ ) (molecular weight:= 304.4 amu; see [www.knovel.com](http://www.knovel.com) for physical constants) and the volume content of ethanol ( $+\text{C}_2\text{H}_5\text{OH}$ ) (molecular weight = 46) that are mixed together in the liquid (col. 9, l. 55-67), namely 50 ml. Given the specific weight of ethanol (0.79 times that of water) said ratio is thus seen to be =  $(52.6 \times 10^{-3}/304.4): (39.5 \times 10^{-3}/46) = 0.02$  (within one percent accuracy), and hence the aforementioned concentration of Pd implies a concentration in terms of parts per billion of ethanol equal to between 5 ppb and 5,000 ppb of ethanol. In light of the molar weight of ethanol (=46) and the molar

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weight of the solvent (water: 18) (col. 9, l. 60) i.e., between  $5 \times 10^{-9}$  and  $5 \times 10^{-6}$ ) times the number of moles of water in 1 kg, the latter being  $1,000/18 = 55.6$  moles, hence between  $5 \times 10^{-9} \times 55.6$  and  $5 \times 10^{-6} \times 55.6$  moles / kg, or between 0.278  $\mu$ moles/kg and 278  $\mu$ moles /kg (within a relative error of one percent). The range in the prior art is thus seen to significantly overlap the range in the invention as claimed, having in common the intersection 0.278 – 10  $\mu$ moles/kg. The aforementioned substantial overlap of the ranges as claimed in the prior art and in the invention as claimed at least establishes *prima facie* obviousness: A *prima facie* case of obviousness typically exists when the ranges of a claimed composition overlap the ranges disclosed in the prior art or when the ranges of a claimed composition do not overlap but are close enough such that one skilled in the art would have expected them to have the same properties. In re Peterson, 65 USPQ2d 1379 (CA FC 2003).

Furthermore, the feeding indeed occurs in a down comer 16 (col. 8, l. 55-67), the down comer extending downward at an opening of the feed water line (see Figure 1), with surfaces of the components being bright or covered only by a native oxide layer (core shroud 18 is of stainless steel (col. 7, l. 55-67)).

*On claim 3:* the method by Hettiarachchi comprises protecting the components (such as 18 as identified overleaf) against stress corrosion cracking (see abstract and col. 1, l. 44-56, and col. 9, l. 25-40).

*On claim 4:* the method comprises feeding the alcohol into a condensate or feed water system and carrying the alcohol into the primary system with the feed water (col. 9, l. 55-67 and col. 10, l. 1-16).

*On claim 6:* the method comprises doping the component surfaces with a precious metal, namely: Pd (palladium) (col. 7, l. 10-35, col. 10, l. 20-col. 11, l. 25).

*On claim 7:* platinum (Pt) is one of the metals that are recommended to be used in the method by Hettiarachchi (col. 5, l. 26-38 and col. 12, claim 7). Furthermore, considering that the actual purpose of metal additions pertains to achieving concentrations in terms of particle number for lowering the ECP (col. 3, l. 10-50) it would have been obvious to adapt the 52.6 mg used for palladium acetylacetonate to reflect the different molecular weight of 393.29 so as to keep the parts per billion unaltered; which leads to the same range for ethanol concentration as before.

### ***Response to Arguments***

Applicant's arguments filed 9/8/05 have been fully considered but they are not persuasive. In particular, Applicant's argument in traverse of rejections under 35 USC 112, first paragraph, clearly confirms that bright means with little or no oxidation. However, that makes "bright" a term of relative degree. The specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

With regard to the traverse of the art rejections over Hettiarachchi (5,818,893) examiner respectfully disagrees with Applicant's assessment of the concentration of ethanol in Hettiarachchi: not the initial concentration in the solution added through the feed water line but the concentration as it eventually exists after feeding is relevant. Given that the palladium in the reactor water is preferably in the range of 1 to 1000 parts per billion (ppb) (col. 11, lines 21-25) and that 52.6 mg of palladium acetylacetonate (Pd

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( $C_5H_7O_2$ )<sub>2</sub>, hence atomic weight 304.4 amu) together with 50 ml of ethanol ( $C_2H_5OH$ , atomic weight 46 amu)(which is 39.5 mg, given the specific weight 0.79 of ethanol) are jointly added (col. 9, l. 55-67), the particle number ratio of Pd to ethanol in the solution is  $(52.6/304.4) : (39.5/46)$ , that is  $0.173 : 0.859 = 1 : 4.96$  and hence the stated concentration of Pd of between 1 ppb (=parts per billion) and 1,000 ppb corresponds to a concentration of ethanol of between 5 and 5,000 ppb (within a percent accuracy). Given the solvent, water (col. 9, l. 55-67), has molecular weight of 18 amu, 1 kg of water contains 55.6 moles of water and hence between  $5 \times 10^{-9} \times 55.6$  and  $5 \times 10^{-6} \times 55.6$  moles of ethanol, that is: between 0.278  $\mu$ moles/kg and 278  $\mu$ moles/kg of ethanol.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johannes P. Mondt whose telephone number is 571-272-1919. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.




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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM

November 24, 2005

Patent Examiner:

  
Johannes Mondt (Art Unit: 3663)